COUNTY OF SAN LUIS OBISPO BOARD OF SUPERVISORS
AGENDA ITEM TRANSMITTAL

(1) DEPARTMENT	(2) MEETING DATE	(3) CONTACT/PHONE
Public Works	1/13/2015	Courtney Howard, Senior Water Resources Engineer (805) 781-1016

(4) SUBJECT

Update on the computer model for the Paso Robles Groundwater Basin and a request to approve Amendment No. 3 to the agreement with Geoscience Support Services, Inc. to prepare additional refinements to the model and conduct nine analyses, increasing the current agreement by $155,679. Districts 1 and 5.

(5) RECOMMENDED ACTION

It is recommended that the Board, acting as the San Luis Obispo County Flood Control and Water Conservation District (Flood Control District), approve attached Amendment No. 3 to the agreement with Geoscience Support Services, Inc. to update the computer model for the Paso Robles Groundwater Basin to prepare additional refinements to the model and conduct nine analyses, increasing the current agreement by $155,679.

(6) FUNDING SOURCE(S)	(7) CURRENT YEAR FINANCIAL IMPACT	(8) ANNUAL FINANCIAL IMPACT	(9) BUDGETED?
Flood Control General	$155,679.00	N/A	N/A

(10) AGENDA PLACEMENT

{ } Consent **{ }** Presentation **{ }** Hearing (Time Est. ___) **{X}** Board Business (Time Est.___)

(11) EXECUTED DOCUMENTS

{ } Resolutions **{X}** Contracts **{ }** Ordinances **{ }** N/A

(12) OUTLINE AGREEMENT REQUISITION NUMBER (OAR)	(13) BUDGET ADJUSTMENT REQUIRED?
N/A	BAR ID Number: N/A **{ }** 4/5 Vote Required **{X}** N/A

(14) LOCATION MAP	(15) BUSINESS IMPACT STATEMENT?	(16) AGENDA ITEM HISTORY
Attached	No	**{ }** N/A Date: 8/28/12, #22

(17) ADMINISTRATIVE OFFICE REVIEW

Nikki J. Schmidt

(18) SUPERVISOR DISTRICT(S)

District 1 , District 5

Reference: 15JAN13-BB-1

County of San Luis Obispo

TO: Board of Supervisors

FROM: Public Works
Courtney Howard, Senior Water Resources Engineer
Mark Hutchinson, Deputy Director of Public Works

DATE: 1/13/2015

SUBJECT: Update on the computer model for the Paso Robles Groundwater Basin and a request to approve Amendment No. 3 to the agreement with Geoscience Support Services, Inc. to prepare additional refinements to the model and conduct nine analyses, increasing the current agreement by $155,679. Districts 1 and 5.

RECOMMENDATION

It is recommended that the Board, acting as the San Luis Obispo County Flood Control and Water Conservation District (Flood Control District), approve attached Amendment No. 3 to the agreement with Geoscience Support Services, Inc. to update the computer model for the Paso Robles Groundwater Basin to prepare additional refinements to the model and conduct nine analyses, increasing the current agreement by $155,679.

DISCUSSION

On August 28, 2012 the Board approved an agreement with Geoscience Support Services, Inc. in the amount of $211,238 to update the computer model for the Paso Robles Groundwater Basin (Basin) and authorized the Public Works Director to sign amendments to the agreement in an amount not to exceed the contingency fund amount of $21,100. The computer model was successfully updated and calibrated for the time period 1981 – 2011, and the executive summary of the final report for the project is included as Attachment "1."

The resulting computer model provides a tool that assists groundwater management entities by simulating Basin responses to various future hydrological and/or land uses and the projected change in storage. The measure of performance for the model is how it replicates the historic data for the Basin. Due to the data requirements for the model, it does not have real-time/current year analysis capabilities. The model can be used to evaluate whether certain projects or actions help to restore or stabilize the Basin's water levels/balance of inflow and outflows over time.

The agreement included the following work components:

- Updating and expanding the inflow and outflow information from the 2005 Paso Basin Computer Model for the time period 1981 – 2011, and subsequent model calibration
- Re-evaluating the conceptualized hydrologic connection between the Atascadero Sub-basin – main basin interface
- Evaluating the sensitivity of model input parameters
- Evaluating the Basin's response to "no-growth" and "growth" scenarios projected over a future thirty year period using the calibrated model

On October 3, 2013, the Public Works Director authorized Amendment No. 1 to the agreement in order to expand public involvement efforts and update the perennial yield estimate for the Basin, at a cost of $18,960 which brought the total agreement amount to $230,198. On April 3, 2014, the Public Works Director authorized Amendment No. 2 to the agreement in order to integrate agreement provisions associated with the receipt of $50,000 in Integrated Regional Water Management Program grant funds for the model update project. It is now recommended that the Board approve Amendment No. 3 to the agreement in the amount of $155,679 in order to prepare additional refinements to the updated model and conduct nine analyses as described below, which would bring the total agreement amount to $385,877.

Computer Model Update Outcomes

Updated Perennial Yield Estimate for the Basin. For the model update period of 1981 to 2011, outflows exceeded inflows to the Basin by 2,400 AF on an average annual basis (i.e. more water left the Basin than was replenished). The period of 1982 to 2010 is representative of the historical average rainfall in the Basin area. The updated estimate for the perennial yield based on that period is 89,200 acre-feet per year (AFY). This is updated from the preliminary results presented in December 2013, which were 2,900 AF and 89,200 AFY, respectively.

Hydraulic Separation of the Atascadero Sub-basin. Results of the reevaluation revealed there is a lack of wells and respective data within close proximity to the Rinconada Fault to adequately determine the degree of separation. Accordingly, the barrier conductivity values that were established by previous studies were maintained for this Basin Model Update.

Future Year Simulations. The model was run to evaluate the Basin's response to "no-growth" and "growth" scenarios projected over a future thirty year period. The no-growth scenario projects that outflows would exceed inflows on an average annual basis over the thirty year period by 5,600 AFY. The growth scenario projects that outflows would exceed inflows on an average annual basis over the thirty year period by 26,200 AFY.

Recommended Refinements. In addition to staff and public review, Fugro Consultants was retained to provide a technical review of model update efforts due to their involvement with the development of the original Basin studies and model and knowledge of Basin characteristics. Proposed refinements were developed by personnel from Geoscience, Todd Groundwater, and Fugro Consultants during a technical meeting held on October 13, 2104, in order to address concerns with using the regional model for analysis in specific areas. Recommended refinements included:

- Refining the evaluation of the pathways for inflow from the watershed to the Basin
- Using a different software module for streamflow/basin interaction
- Refining the evaluation of rainfall percolation and return flows in the Basin

- Refining the range of hydraulic conductivity values for recalibration

Recommended Analyses Using the Model. After the above refinements, nine analyses using the model will be conducted to evaluate basin responses to conceptual projects in specific areas. The intent of the analyses is to estimate to what degree proposed actions stabilize levels and quantify the amount of water that would either need to be added to creek systems, provided to offset pumping or conserved in order to achieve the Basin Management Objectives included in the 2012 Groundwater Management Plan for the Basin (i.e. stabilization of groundwater levels in the Estrella, Creston and Shandon sub-areas). Analyses include:

- Updated "Baseline with Growth" run for "status quo" comparison purposes
- 10% Demand Reduction Scenario
- Salinas River Recharge with Surplus Nacimiento water
- Offset Basin Pumping with Recycled Water
- Offset Water Demand in Estrella Sub-Area
- Additional Releases to Huer Huero Creek System
- Additional Releases to Estrella Creek System
- Offset Pumping in Creston Sub-Area with Supplemental Water
- Offset Pumping in Shandon Sub-Area with Supplemental Water

Analysis results are also needed for the Supply Options Feasibility Study that is concurrently being developed in order to quantify the benefit of specific options to the Basin.

OTHER AGENCY INVOLVEMENT/IMPACT

The Paso Basin Advisory Committee is the primary advisory body for the Basin and recommended that the Board approve staff's recommendation during its December 18, 2014 meeting. Correspondence is included as Attachment "2."

Local agencies, such as the City of Paso Robles, Templeton Community Services District and Atascadero Mutual Water Company, and advisory groups, such as the Water Resources Advisory Committee, and other community, agricultural and economic advisory committees, are engaged in the short, medium and long term efforts associated with management of the Basin.

Coordination with the Administrative Office, Agricultural Commissioner's Office, County Counsel, Planning and Building Department and Public Health Department is also occurring on issues associated with the Paso Basin.

County Counsel approved the amendment as to form and legal effect.

FINANCIAL CONSIDERATIONS

Funding for the Computer Model Update project is included in Fund 19 of the Flood Control District, whose revenue source is Flood Control District Reserves. The Flood Control Fund 19 budget for the current fiscal year is $1,650,856, and approximately $877,543 has been expended or encumbered through the end of November. The Fiscal Year 2014-15 budget included funding for using the updated model to conduct for these analyses, therefore it is anticipated that existing budget is sufficient to fund the amendment.

RESULTS

Approving the amendment to fund additional refinements to the model and to conduct analyses will help to ensure the Basin is effectively managed so it can remain a reliable source of water for all of its users, contributing to safe, healthy, livable, prosperous and well-governed communities.

File: CF 500.132.01 Groundwater Study – Paso Robles Management Plan

Reference: 15JAN13-BB-1

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ATTACHMENTS

1. Vicinity Map
2. Attachment 1 – Paso Basin Computer Model Update Final Report Executive Summary
3. Attachment 2 – Correspondence from the Paso Basin Advisory Committee
4. Amendment No. 3 to Agreement for Professional Engineering Services
5. Attachments to Amendment No. 3